

REMARKS

This Amendment is responsive to the Final Office Action of June 9, 2005. Claims 3 and 13 have been amended. Claims 1-40 remain pending in this application. Reexamination and reconsideration are respectfully requested.

The Examiner objected to Claims 13-15 because of an informality in Claim 13. This objection has been overcome by a minor amendment to Claim 13 as suggested by the Examiner.

The Examiner rejected Claim 3 under 35 USC §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is respectfully traversed.

The Examiner objected to the term "third delay" associated with the error signal path as unclear in light of the specification, since no delay element is shown in the error path. This is not inconsistent, however, since the expression "third delay" simply refers to the signal delay that inherently occurs when the RF signal traverses the path including the error amplifier (in the specification the path from the carrier cancellation combiner 315, second gain and phase adjusting network 325, error amplifier 400, and error injection coupler 230). The language does not refer to a distinct delay element which is what lead to the Examiner's confusion. To further clarify this Claim 3 has been amended to make it clear that the delay is inherent in the recited elements and is not a separate element. Accordingly, it is respectfully submitted this rejection is fully traversed.

The Examiner rejected Claims 1,2,4-7,16,26,28-30,33-35 under 35 USC 102(b) as being anticipated by Gomez (6,275,106). This rejection is respectfully traversed.

It is respectfully submitted that the Examiner has incorrectly applied the claim language to the Gomez reference since that reference fails to disclose "a carrier signal reduction circuit coupled to the output sampling coupler and providing a sampled output signal with a reduced carrier component" (as set out in Claim 1). Further, Claim 1 recites that the resulting reduced carrier component is used in a spurious signal detector having a DSP. The specification clearly teaches the importance of carrier level reduction prior to inputting such attenuated output signal sample into the DSP input port for spectral analysis. This reduction in carrier amplitude allows for a lower dynamic range requirement placed on the DSP. No such reference or teaching is found in Gomez. The teachings of the present invention are therefore away from the Gomez reference which fails to disclose use of a reduced carrier component in a DSP.

In applying Claim 1 to Gomez, the Examiner equated the claimed "carrier signal reduction circuit" with the (OUT) terminal of directional coupler 19 of Gomez. However, this (conventional) element is separately recited in Claim 1 (the claimed "output sampling coupler") and is clearly a different element than the claimed "carrier signal reduction circuit" with different function. Applicants would also like to point out that the (OUT) terminal of the (conventional) directional coupler 19 of Gomez contains full strength, amplified carrier signals (composite amplified signal) and remaining IMD signals ('106 patent, column 5, lines 21-31). No reference to carrier to distortion level reduction in the composite output RF signal, as sampled at directional coupler (19), is provided in Gomez. Accordingly, it is respectfully submitted that the invention of Claim 1 is clearly not disclosed in the Gomez reference.

It is respectfully submitted that this deficiency of Gomez also prevents reading the other independent claims on that reference as will be appreciated by review of the

claim language. Accordingly, it is respectfully submitted these rejections are also fully traversed.

With respect to the dependent claims, these rejections are also fully traversed by the above. Nonetheless, several of these claims elaborate on the above discussed claim limitations and the Examiner's arguments for rejecting these claims are therefore addressed specifically below.

Regarding Claim 7, the Examiner stated that "input sampling coupler (46) and control select (30)" of Gomez can be read as "a second carrier cancellation combiner having connections and functions thereof". This is inconsistent with the Examiner's rejection of base Claim 1, however, which rejection equated the sampling coupler (19) of Gomez with the claimed "carrier signal reduction circuit" which includes the "second carrier cancellation combiner" of Claim 7. In the Gomez reference these two elements are unrelated. The Gomez reference states "an additional directional test port coupler 46 is coupled to the path from the directional coupler 25 at the output of the main RF amplifier 20, so as to provide a further signal 'BPM' representative of the amplified output of amplifier 20 to fourth input 34 of controlled switch 30" (Column 6, lines 12-17). From this description it is obvious that Gomez teaches a need for an output signal sample from the main RF amplifier independent from coupler (19). It is also clear *inter alia* that this sampled output has a full carrier component and there is no second carrier cancellation present for this output (nor anywhere else within the Gomez reference). Even though element 30 (RF signal multiplexer) is used as a RF routing switch for selective signal sampling (Col 5, 33-50), it is obvious to one skilled in the art that a multi position RF switch cannot be mistaken for a carrier cancellation combiner. Accordingly, it is respectfully submitted the rejection of Claim 7 is inconsistent with that of Claim 1

and further emphasizes the failure of a consistent reading of the claim language onto Gomez.

Regarding Claim 26, the Examiner stated that in the feed forward amplifier of Gomez the lower power carrier component is inherently seen in the output from terminal (35) since the majority of the power carrier component is already cancelled via the carrier cancellation loop. This rejection is respectfully traversed.

As apparent from the above, applicants would like to stress that the Gomez reference does not provide for a carrier signal reduction circuit separate from the conventional carrier cancellation loop (carrier cancellation combiner and related elements) as taught and claimed in the present invention. Also, the only carrier cancelled signal available at the output terminal (35) is the output of the main amplifier RF carrier cancelled signals as well as IMD's generated by the main RF amplifier. In the present invention carrier cancelled signals are generated after sampling this output– a different signal all together.

Regarding Claim 35 the Examiner stated that the feed forward amplifier of Gomez comprises a controller for controlling the gain and phase adjuster and thereby minimizes the detected distortion. This rejection is respectfully traversed.

It is respectfully submitted that the above rejection clearly ignored the limitation of Claim 35. As should be apparent from the above discussion the Gomez controller does not reduce carrier signal levels (relative to residual IMD levels) found in the output of the feed forward system. Therefore, Claim 35 further distinguishes that reference.

The Examiner rejected Claims 10,11,17-20,23-25,36-39,40 under 35 USC 103(a) as being unpatentable over Gomez. This rejection is respectfully traversed.

It is respectfully submitted that the arguments presented by the Examiner for these claims fail to address the above discussed fundamental deficiency of Gomez. Accordingly, it is respectfully submitted these rejections are also fully traversed by the above.

In addition these claims recite independently patentable features.

Regarding Claims 10, 11, 23, 24 the Examiner stated that the characteristics in the recited claims can be obtained by changing the size of that particular component and that a change in size is generally recognized as being within the level of ordinary skill in the art to provide optimum performance in a feed forward circuit. Regarding Claims 17-20, 36-39, the Examiner stated similarly that it would have been obvious to one of ordinary skill in the art at the time of the invention was made to have changed the size of the second delay (9) to obtain such desired characteristics, since such a modification would have been within the level of ordinary skill in the art. This rejection is respectfully traversed.

Applicants would like to point out that conventional feed forward amplifier designs require that the signal delay through each portion of the feed forward loops be equal – (see e.g., Gomez, Col 3, lines 14-19; 5,489,875, Col 1, lines 58-65; 6,118,339, Col 2, Lines 19-29; 6,094,096 Col 2, lines 26-31)--this conventional teaching is well known and is confirmed by the other references on file. A simple change in delay size thus would result in an inoperable feed forward amplifier and would not be a routine modification as stated by the Examiner. This would be obvious to one of ordinary skill in the art following conventional teachings requiring equalized delays through the passive and

active (error amplifier) paths. The present invention runs counter to these teachings of an equalized delay path requirement by employing reduced carrier output spectrum analysis. Accordingly, it is respectfully submitted these claims further distinguish the Gomez reference.

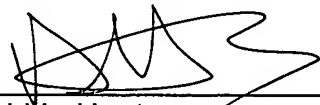
Additional distinguishing features are set out in the other dependent claims.

Accordingly, it is respectfully submitted all rejections are fully traversed.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and a Notice of Allowance is respectfully requested. It is requested that the Examiner telephone the undersigned attorney if it appears that any impediment remains to allowance of the application.

Respectfully submitted,

Date: 8-2-05



David L. Henty
Registration No. 31,323
Myers Dawes Andras & Sherman LLP
19900 MacArthur Boulevard, Suite 1150
Irvine, CA 92612
(949) 223-9600